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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MCKENNA LONG & ALDRIDGE LLP  
1900 K STREET, NW  
WASHINGTON, DC 20006

EXAMINER

QI, ZHI QIANG

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/256,180

Applicant(s)

SEO ET AL.

Examiner

Mike Qi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 35-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 25.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**2. Claims 35-54 and 56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-56 of U.S. Patent No. 6,335,776 in view of JP 5-297412.**

Although the conflicting claims are not identical, but they are not patentably distinct from each other, because the claims 1-56 of the patent US 6,335,776 have a very corresponding limitations with the claims 35 and 56 of this application except a few wording are different, but substantially they have the doctrine of obviousness-type double limitations. Especially, claims 30 and 56 claimed limitations for the structure of a multi-domain liquid crystal display device are covered by the claims 1-56 of the patent US 6,335,776.

In claims 35 and 56 of this application, recitation:

Art Unit: 2871

“ . . . said pixel region being divided into at least two portions and liquid crystal molecules in said liquid crystal layer in each portion being driven differently from each other; a pixel electrode electrically charged through said data bus line in said pixel region; a common-auxiliary electrode surrounding said pixel electrode on a same layer whereon said pixel electrode is formed; an alignment layer on at least one substrate between said first and second substrates.”

In claims 1, 31, 33, 38, 46, 48, 49, 55 and 56 of the patent US 6,335,776, recitation:

“ . . . the pixel region being divided into at least two portions and the liquid crystal layer (or liquid crystal molecules in said liquid crystal layer, as claimed in claim 56) in each portion being driven differently from each other; a pixel electrode electrically charged through said data bus line to drive said liquid crystal layer with said common electrode; an auxiliary electrode (the auxiliary electrode is electrically connected to the common electrode as claimed in claim 3) on a same layer whereon said pixel electrode is formed; an alignment layer on at least one substrate between said first and second substrates.”

Concerning a common-auxiliary electrode surrounding the pixel electrode, JP 5-297412 discloses (Figs.1-8; Abstract) that the auxiliary electrode (18) is in a rectangular frame shape having opening, i.e., the common-auxiliary electrode surrounding the pixel electrode (16), and such that the liquid crystal display would be without greatly decreasing the aperture ratio. Therefore, it would have been obvious at time the

Art Unit: 2871

invention was made to arrange the common-auxiliary electrode surrounding the pixel electrode as claimed for improving the display aperture ratio.

Concerning the two substrates, liquid crystal layer between the two substrates, using gate insulator, passivation layer, light shielding layer, color filter and common electrode, that is conventional in the art and disclosed in JP 5-297412, and that would have been at least obvious.

Therefore, the claims 35 and 56 of this application and the claims 1-56 of the patent US 6,335,776 substantially have the doctrine of obviousness-type double limitations, and they have at least an obviousness-type difference.

Claim 36, using pixel as a storage capacitor electrode and below the passivation layer must using gate insulator as a dielectric, such that must use gate line as the other capacitor electrode to form a capacitance, and that is a conventional in the art to for a storage capacitance.

Claim 37, using light-shielding layer overlaps the common-auxiliary electrode that is a conventional in the art in order to increase the display aperture ratio.

Claim 38, the common-auxiliary electrode is electrically connected to the common electrode that is conventional in the art to connect with a common potential.

Claims 39-44, using an electric field inducing window in any layer such as the a dielectric frame as a hole on the common electrode, or pixel electrode has an window, or the passivation layer has a window, or the gate insulator has a window, or the common electrode has a window, or the color filter has a window to control the liquid

Art Unit: 2871

crystal molecules aligned direction, that was common and known in the art to obtain a multi-domain effect so as to widen the display viewing angle.

Claim 45, using overcoat layer on the color filter that is common and known in the art because the overcoat layer also is a protective insulating layer to protect the color filter during the etching process and the flat surface to be obtained.

Claim 47, "the passivation layer includes a material selected from the group consisting of BenzoCycloButene (BCB), acrylic resin, and polyimide compound" that is the same as the claim 7 of the patent US 6,335,776.

Claim 48, "the common-auxiliary electrode includes a material selected from the group consisting of Indium Tin Oxide (ITO), aluminum, molybdenum, chromium, tantalum, titanium, and an alloy thereof" that is same as the claim 5 of the patent US 6,335,776.

Claim 49, "the pixel electrode includes a material selected from the group consisting of Indium Tin Oxide (ITO), aluminum, and chromium" that is the same as the claim 4 of the patent US 6,335,776.

Claim 50, "the common electrode includes Indium Tin Oxide (ITO)" that is the same as the claim 6 of the patent US 6,335,776.

Claim 51, "the alignment layer is divided into at least two portions, liquid crystal molecules in each portion being aligned differently from each other" compared with the claim 11 of the patent US 6,335,776 "the alignment layer is divided into at least two portions, liquid crystal molecules in the liquid crystal layer in each portion being aligned differently from each other" that are at least an obviousness-type difference.

Claim 52, "all portions of the at least two portions of the alignment layer are non-alignment-treated" is the same as the claim 13 of the patent US 6,335,776.

Claim 53, "the liquid crystal layer includes liquid crystal molecules having negative dielectric anisotropy" is the same as the claim 21 of the patent US 6,335,776.

Claim 54, "a negative bi-axial film on at least one substrate" compared with the claim 53 of the patent US 6,335,776 "the compensation film includes a negative biaxial film on an outer surface of the at least one substrate" that are at least an obviousness-type difference.

**3. Claim 55 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-56 of U.S. Patent No. 6,335,776 in view of JP 5-297412 and US 5,249,070 (Takano).**

Claim 55, Tanaka discloses (Abstract) that using chiral dopan in twist nematic liquid crystal material for achieving a first tilt domain and a second tilt domain of the liquid crystal material when a sufficient voltage is applied to the electrodes, such that the contrast is very symmetrical for up/down viewing angles.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to use chiral dopants as claimed in claim 55 for achieving the multi-domain liquid crystal display and improving the viewing angles.

**4. Claim 57 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-56 of U.S. Patent No. 6,335,776 in view of JP 5-297412 and US 5,694,185 (Oh).**

Although the conflicting claims are not identical, but they are not patentably

Art Unit: 2871

distinct from each other, because the claims 1-56 of the patent US 6,335,776 have a very corresponding limitations with the claim 57 of this application except a few wording are different, but substantially they have the doctrine of obviousness-type double limitations. Especially, claim 57 claimed limitations for the structure of a multi-domain liquid crystal display device are covered by the claims 1-56 of the patent US 6,335,776.

In claim 57 of this application, recitation:

“ . . . said pixel region being divided into at least two portions and liquid crystal molecules in said liquid crystal layer in each portion being driven differently from each other; a pixel electrode electrically charged through said data bus line in said pixel region; a common-auxiliary electrode surrounding said pixel electrode on a same layer whereon said pixel electrode is formed; an alignment layer on at least one substrate between said first and second substrates.”

In claims 1, 31, 33, 38, 46, 48, 49, 55 and 56 of the patent US 6,335,776, recitation:

“ . . . the pixel region being divided into at least two portions and the liquid crystal layer (or liquid crystal molecules in said liquid crystal layer, as claimed in claim 56) in each portion being driven differently from each other; a pixel electrode electrically charged through said data bus line to drive said liquid crystal layer with said common electrode; an auxiliary electrode (the auxiliary electrode is electrically connected to the common electrode as claimed in claim 3) on a same layer whereon said pixel electrode is formed; an alignment layer on at least one substrate between said first and second substrates.”



Concerning a common-auxiliary electrode surrounding the pixel electrode, JP 5-297412 discloses (Figs.1-8; Abstract) that the auxiliary electrode (18) is in a rectangular frame shape having opening, i.e., the common-auxiliary electrode surrounding the pixel electrode (16), and such that the liquid crystal display would be without greatly decreasing the aperture ratio. Therefore, it would have been obvious at time the invention was made to arrange the common-auxiliary electrode surrounding the pixel electrode as claimed for improving the display aperture ratio.

Concerning an n-line thin film transistor at a crossing area of the gate and data bus line, Oh discloses (Fig.3; Abstract) that an non-linear (n-line) thin film transistor (TFT 70) at a crossing area of the gate bus line (50) and the data bus line (60), so as to increase the aperture ratio. Therefore, it have been obvious to those skilled in the art at the time the invention was made to use an n-line TFT for increasing an aperture ratio.

Concerning the two substrates, liquid crystal layer between the two substrates, using gate insulator, passivation layer, light shielding layer, color filter and common electrode, that is conventional in the art and disclosed in JP 5-297412, and that would have been at least obvious.

Therefore, the claim 57 of this application and the claims 1-56 of the patent US 6,335,776 substantially have the doctrine of obviousness-type double limitations, and they have at least an obviousness-type difference.

***Response to Arguments***

5. Applicant's arguments filed on Jul.14, 2003 have been fully considered but they are not persuasive.

Applicant's **only** arguments are as follows:

1) The allowable subject matter is the feature of "a common-auxiliary electrode surrounding the pixel electrode on a same layer whereon the pixel electrode is formed".

Examiner's responses to Applicant's **only** arguments are as follows:

1) According to the patent US 6,335,776 in view of JP 5-297412, and US 5,694,185 (Oh), the feature of "a common-auxiliary electrode surrounding the pixel electrode on a same layer whereon the pixel electrode is formed" in the claims 35, 56 and 57 would have been an obviousness-type double patenting.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2871


extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (703) 308-6213.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mike Qi  
September 14, 2003

  
ROBERT H. KIM  
SUPERVISOR / PATENT EXAMINER  
TECHNOLOGY CENTER 2000